MON152CL30

Security Systems

EN

Instruction Manual

15-inch Color LCD Flat Panel Display Monitor

BOSCH

Important Safeguards

1. **Read, Follow, and Retain Instructions** - All safety and operating instructions should be read and followed before operating the unit. Retain instructions for future reference.
2. **Heed Warnings** - Adhere to all warnings on the unit and in the operating instructions.
3. **Attachments** - Attachments not recommended by the product manufacturer should not be used, as they may cause hazards.
4. **Installation Cautions** - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury to a person and serious damage to the unit. Use only manufacturer-recommended accessories, or those sold with the product. Mount the unit per the manufacturer's instructions. Appliance and cart combination should be moved with care. Quick stops, excessive force, or uneven surfaces may cause the appliance and cart combination to overturn.
5. **Cleaning** - Unplug the unit from the outlet before cleaning. Follow any instructions provided with the unit. Generally, using a damp cloth for cleaning is sufficient. Do not use liquid cleaners or aerosol cleaners.
6. **Servicing** - Do not attempt to service this unit yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
7. **Damage Requiring Service** - Unplug the unit from the main AC power source and refer servicing to qualified service personnel under the following conditions:
   - When the power supply cord or plug is damaged.
   - If liquid has been spilled or an object has fallen into the unit.
   - If the unit has been exposed to water and/or inclement weather (rain, snow, etc.).
   - If the unit does not operate normally, when following the operating instructions. Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may result in damage, and require extensive work by a qualified technician to restore the unit to normal operation.
   - If the unit has been dropped or the cabinet damaged.
   - If the unit exhibits a distinct change in performance, this indicates that service is needed.
8. **Replacement Parts** - When replacement parts are required, the service technician should use replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electrical shock or other hazards.
9. **Safety Check** - Upon completion of servicing or repairs to the unit, ask the service technician to perform safety checks to ensure proper operating condition.
10. **Power Sources** - Operate the unit only from the type of power source indicated on the label. If unsure of the type of power supply to use, contact your dealer or local power company.
    - For units intended to operate from battery power, refer to the operating instructions.
    - For units intended to operate **with External Power Supplies**, use only the recommended approved power supplies.
    - For units intended to operate with a limited power source, this power source must comply with EN60950. Substitutions may damage the unit or cause fire or shock.
    - For units intended to operate at 24VAC, normal input voltage is **24VAC**. Voltage applied to the unit's power input should not exceed 30VAC. User-supplied wiring, from the 24VAC supply to unit, must be in compliance with electrical codes (Class 2 power levels). Do not ground the 24VAC supply at the terminals or at the unit's power supply terminals.
11. **Coax Grounding** - If an outside cable system is connected to the unit, ensure that the cable system is grounded. U.S.A. models only - Section 810 of the National Electrical Code, ANSI/NFPA No.70, provides information regarding proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
12. **Grounding** - This unit may be equipped with a 3-wire grounding plug (a plug with a third pin, for grounding). This safety feature allows the plug to fit into a grounding power outlet only. If unable to insert the plug into the outlet, contact an electrician to arrange replacement of the obsolete outlet. Do not defeat the safety purpose of the grounding plug.
    - Outdoor equipment should only be connected to the unit's inputs after this unit has had its grounding plug connected to a grounded outlet or its ground terminal properly connected to a ground source.
    - The unit's input connectors must be disconnected from outdoor equipment before disconnecting the grounding plug or grounding terminal.
    - Proper safety precautions such as grounding should be followed for any outdoor device connected to this unit.
13. **Lightning** - For added protection during a lightning storm, or when this unit is left unattended and unused for long periods of time, unplug the unit from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power line surges.

For Indoor Product

1. **Water and Moisture** - Do not use this unit near water - for example, in a wet basement, in an unprotected outdoor installation or in any area classified as a wet location.
2. **Object and Liquid Entry** - Never push objects of any kind into this unit through openings, as they might touch dangerous voltage points or create short circuits, resulting in a fire or electrical shock. Never spill liquid of any kind on the unit.
3. **Power Cord and Power Cord Protection** - For units intended to operate with 230VAC, 50Hz, the input and output power cord must comply with the latest versions of IEC Publication 227 or IEC Publication 245.
   Power supply cords should be routed so they are not likely to be walked on or pinched. Pay particular attention to location of cords and plugs, convenience receptacles, and the point of exit from the appliance.
4. **Overloading** - Do not overload outlets and extension cords; this can result in a risk of fire or electrical shock.

For Outdoor Product

Power Lines - An outdoor system should not be located in the vicinity of overhead power lines, electric lights or power circuits, or where it may contact such power lines or circuits. When installing an outdoor system, extreme care should be taken to keep from touching power lines or circuits, as this contact might be fatal. U.S.A. models only - refer to the National Electrical Code Article 820 regarding installation of CATV systems.

For Rack-mount Product

1. **Ventilation** - Do not place this equipment in a built-in installation or rack, unless proper ventilation is provided, or the manufacturer's instructions were followed. The equipment must not exceed its maximum operating temperature requirements.
2. **Mechanical Loading** - When rack-mounting the equipment, ensure that a hazardous condition is not created by uneven mechanical loading.

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

WARNING:
Electrostatic-sensitive device. Use proper CMOS/MOSFET handling precautions to avoid electrostatic discharge.

NOTE: Grounded wrist straps must be worn and proper ESD safety precautions observed when handling the electrostatic-sensitive printed circuit boards.

Safety Precautions

CAUTION
RISK OF ELECTRIC SHOCK. DO NOT OPEN!

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol indicates the presence of uninsulated “dangerous voltage” within the product’s enclosure that can cause an electric shock.

This symbol indicates the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.

Power Disconnect. Units with or without ON-OFF switches have power supplied to the unit whenever the power cord is inserted into the power source; however, the unit is operational only when the ON-OFF switch is in the ON position. The power cord is the main power disconnect for all units.

FCC & ICES INFORMATION

(U.S.A. and Canadian Models Only)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules and ICES-003 of Industry Canada. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer, or an experienced radio/TV technician for help.

Intentional or unintentional changes or modifications, not expressly approved by the party responsible for compliance, shall not be made. Any such changes or modifications could void the user's authority to operate the equipment.The user may find the following booklet, prepared by the Federal Communications Commission, helpful: How to Identify and Resolve Radio-TV Interference Problems. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Sécurité

ATTENTION

RISQUE D'ÉLECTROCUTION. NE PAS OUVRIR !

ATTENTION : POUR ÉVITER TOUT RISQUE D'ÉLECTROCUTION, N'ESSAYEZ PAS DE RETIRER LE CAPOT (OU LE PANNEAU ARRIÈRE). CET APPAREIL NE CONTIENT AUCUN COMPOSANT SUSCEPTIBLE D'ÊTRE RÉPARÉ PAR L'UTILISATEUR. CONFIEZ LA RÉPARATION DE L'APPAREIL À DU PERSONNEL QUALIFIÉ.

Ce symbole signale que le produit renferme une « tension potentiellement dangereuse » non isolée susceptible de provoquer une électrocution.

Ce symbole invite l'utilisateur à consulter les instructions d'utilisation et d'entretien (dépannage) reprises dans la documentation qui accompagne l'appareil.

Attention : l'installation doit exclusivement être réalisée par du personnel qualifié, conformément au code national d'électricité américain (NEC) ou au code d'électricité local en vigueur.

Coupure de l'alimentation. Qu'ils soient pourvus ou non d'un commutateur ON/OFF, tous les appareils reçoivent de l'énergie une fois le cordon branché sur la source d'alimentation. Toutefois, l'appareil ne fonctionne réellement que lorsque le commutateur est réglé sur ON. Le débranchement du cordon d'alimentation permet de couper l'alimentation des appareils.

Sicherheitshinweise

VORSICHT

ELEKTRISCHE SPANNUNG. NICHT ÖFFNEN!

VORSICHT: UM EINEN ELEKTRISCHEN SCHLAG ZU VERMEIDEN, IST DIE ABDECKUNG (ODER RÜCKSEITE) NICHT ZU ENTFERNEN. ES BEFINDEN SICH KEINE TEILE IN DIESEM BEREICH, DIE VOM BENUTZER GEWARTET WERDEN KÖNNEN. LASSEN SIE WARTUNGSARBEITEN NUR VON QUALIFIZIERTEM WARTUNGSPERSONAL AUSFÜHREN.

Das Symbol macht auf nicht isolierte „gefährliche Spannung" im Gehäuse aufmerksam. Dies kann zu einem elektrischen Schlag führen.

Der Benutzer sollte sich ausführlich über Anweisungen für die Bedienung und Instandhaltung (Wartung) in den begleitenden Unterlagen informieren.

Achtung! Die Installation sollte nur von qualifiziertem Kundendienstpersonal gemäß jeweils zutreffender Elektrovorschriften ausgeführt werden.

Unterbrechung des Netzanschlusses. Geräte mit oder ohne Netzschalter haben Spannung am Gerät anliegen, sobald der Netzstecker in die Steckdose gesteckt wird. Das Gerät ist jedoch nur betriebsbereit, wenn der Netzschalter (EIN/AUS) auf EIN steht. Wenn das Netzkabel aus der Steckdose gezogen wird, ist die Spannungszuführung zum Gerät vollkommen unterbrochen.

Precauciones de Seguridad

ATTENZIONE

PERICOLO DI SCOSSA ELETTRICA. NON APRIRE.

PRECAUCIÓN: PARA DISMINUIR EL RIESGO DE DESCARGA ELÉCTRICA, NO RETIRE LA CUBIERTA (NI LA PARTE POSTERIOR). NO EXISTEN PIEZAS DE RECAMBIO EN EL INTERIOR DEL EQUIPO. EL PERSONAL DE SERVICIO CUALIFICADO SE ENCARGA DE REALIZAR LAS REPARACIONES.

Este símbolo indica que existen puntos de tensión peligrosos sin aislamiento dentro de la cubierta de la unidad. Estos puntos pueden constituir un riesgo de descarga eléctrica.

El usuario debe consultar las instrucciones de funcionamiento y mantenimiento (reparación) en la documentación que se suministra con el aparato.

Atención: la instalación la debe realizar únicamente personal cualificado de conformidad con el National Electric Code o las normas aplicables en su país.

Desconexión de la alimentación. Las unidades con o sin interruptores de encendido/apagado reciben alimentación eléctrica siempre que el cable de alimentación esté conectado a la fuente de alimentación. Sin embargo, la unidad sólo funciona cuando el interruptor está en la posición de encendido. El cable de alimentación es la principal fuente de desconexión de todas las unidades.

Veiligheidsmaatregelen

VOORZICHTIG

GEVAAR VOOR ELEKTRISCHE SCHOK. NIET OPENEN!

VOORZICHTIG: OPEN DE BEHUIZING OF DE ACHTERKANT VAN HET APPARAAT NIET. ZO VERMINDERT U HET RISICO OP ELEKTRISCHE SCHOKKEN. IN HET APPARAAT BEVINDEN ZICH GEEN ONDERDELEN DIE U ZELF KUNT REPAREREN. LAAT SERVICE EN ONDERHOUD UITVOEREN DOOR GEKWALIFICEERD PERSONEEL.

Dit symbool geeft aan dat er binnen in het apparaat ongeïsoleerde, gevaarlijke spanning aanwezig is die mogelijk elektrische schokken kan veroorzaken.

De gebruiker dient de bedienings- en onderhoudsvoorschriften te raadplegen in de documentatie die werd meegeleverd met het apparaat.

Attentie: het apparaat mag alleen door gekwalificeerd personeel worden geïnstalleerd. De installatie dient in overeenstemming met de nationale elektrische richtlijnen of de van toepassing zijnde lokale richtlijnen te worden uitgevoerd.

Spanning uitschakelen. Apparatuur met of zonder aan-uitschakelaar staat onder spanning zolang de stekker is aangesloten op de wandcontactdoos. De apparatuur is uitsluitend in werking als de aan-uitschakelaar aan staat. Het netsnoer is de "hoofdschakelaar" voor alle apparatuur.

Medidas de Segurança

CUIDADO

RISCO DE CHOQUE ELÉCTRICO. NÃO ABRIR!

CUIDADO: PARA REDUZIR O RISCO DE CHOQUE ELÉCTRICO, NÃO RETIRE A TAMPA (OU A PARTE POSTERIOR). NO INTERIOR, NÃO EXISTEM PEÇAS QUE POSSAM SER REPARADAS PELO UTILIZADOR. REMETA A ASSISTÊNCIA PARA OS TÉCNICOS QUALIFICADOS.

Este símbolo indica a presença de "tensão perigosa" não isolada dentro da estrutura do produto, o que pode constituir risco de choque eléctrico.

O utilizador deve consultar as instruções de funcionamento e manutenção (assistência) nos documentos que acompanham o aparelho.

Atenção: a instalação deve ser executada apenas por técnicos qualificados da assistência, de acordo com o código eléctrico nacional ou os códigos locais aplicáveis.

Corte de corrente. As unidades com ou sem interruptores ON-OFF (ligar/desligar) recebem corrente sempre que o fio de alimentação está introduzido na fonte de alimentação; contudo, a unidade apenas está operacional quando o interruptor ON-OFF está na posição ON. O fio de alimentação destina-se a desligar a corrente em todas as unidades.

Sicurezza

ATTENZIONE

PERICOLO DI SCOSSA ELETTRICA. NON APRIRE.

ATTENZIONE: PER RIDURRE IL RISCHIO DI SCOSSE ELETTRICHE NON RIMUOVERE LA COPERTURA (O IL PANNELLO POSTERIORE). L'UNITÀ NON CONTIENE COMPONENTI INTERNI RIPARABILI DALL'UTENTE. PER QUALSIASI INTERVENTO, RIVOLGERSI A PERSONALE TECNICO QUALIFICATO.

Questo simbolo indica la presenza di "tensione pericolosa" non isolata all'interno del contenitore del prodotto. Ciò comporta un potenziale rischio di scosse elettriche.

Si consiglia di consultare le istruzioni operative e di manutenzione (interventi tecnici) contenute nella documentazione fornita con il dispositivo.

Attenzione: l'installazione deve essere effettuata esclusivamente da personale tecnico qualificato in conformità con il National Electrical Code o con le normative locali vigenti.

Scollegamento dell'alimentazione. Le unità dotate o sprovviste di interruttori ON-OFF vengono alimentate quando si inserisce il cavo nella presa dell'alimentazione. L'unità è tuttavia in funzione solo quando l'interruttore ON-OFF si trova nella posizione ON. Il cavo di alimentazione costituisce il dispositivo di scollegamento dell'alimentazione principale per tutte le unità.

安全预防措施

CAUTION

RISK OF ELECTRIC SHOCK. DO NOT OPEN!

注意：为避免受到电击，不要拆除机盖（或后盖）。用户不得擅自维修里面的部件。有关维修事项，请咨询合格的维修人员。

此符号表示产品机壳内存在未绝缘的“危险电压”。这可能导致电击。

用户应参照设备附带的操作和维护（维修）说明。

注意：安装须由合格的维修人员遵照美国国家电工标准或相关电气规则进行。

断开电源。在电源线插入电源时，配备或未配备 ON-OFF 开关的设备都已通电；但设备只有在 ON-OFF 开关处于 ON 位置时才能工作。对于所有设备，电源线是断开电源的主要方式。

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1.0 UNPACKING

This equipment should be unpacked and handled with care. If an item appears to have been damaged in shipment, notify the shipper.

Verify that all parts shown in the *Parts List* have been included. If any items are missing, notify your Bosch Security Systems Sales or Customer Service Representative.

The original packing carton is the safest container in which to transport the unit. Save it for possible future use.

1.1 Parts List

Qty	Item
1	MON152CL30 Color LCD flat panel monitor
2	Power Cords: 3-wire with grounded plug, 1.8 m (6 ft) long; One (1) with European Continental plug type and one (1) with U.S. plug type
1	Analog VGA cable, 1.5 m (5 ft) (DVI-I to D-SUB)
1	Power supply extension cable, 1.5 m (5 ft)
1	This installation manual

2.0 SERVICE

If the unit requires servicing, contact the nearest Bosch Security Systems Service Center for authorization to return the unit and for shipping instructions.

Service Centers

USA

Phone: 800-366-2283 / 585-340-4162
fax: 800-366-1329
e-mail: cctv.repair@us.bosch.com

CCTV Spare Parts

Phone: 800-894-5215 / 408-957-3065
fax: 408-935-5938
e-mail: BoschCCTVparts@ca.slr.com

Canada

Phone: 514-738-2434
fax: 514-738-8480

Europe, Middle East & Asia Pacific Region

Phone: 44 (0) 1495 274558
fax: 44 (0) 1495 274280
email: rmahelpdesk@solectron.com

For additional information, see www.boschsecurity.com.

3.0 MON152CL30 EXPLODED VIEW

The front panel of the MON152CL30 contains various push button features (see Figure 1, Items 1-8) that allow you to adjust your screen to different levels.

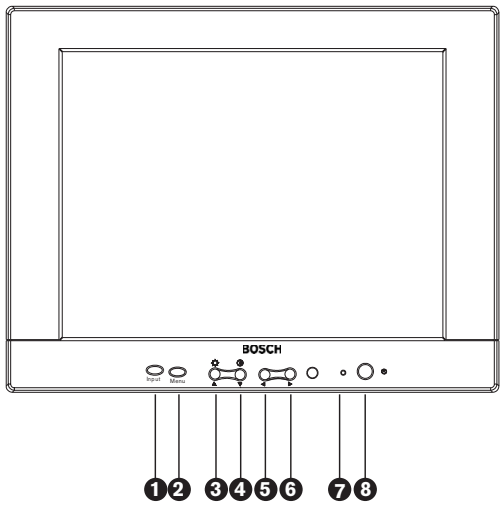


Figure 1: Front Panel

#	Button	Description	
1	Input	Selects the signal to be displayed	
2	Menu	Selects the on screen display (OSD)	
3	▲	Selects brightness	Scrolls up in the OSD
4	▼	Selects contrast	Scrolls down in the OSD
5	◀	Decreases the value	Scrolls left in the OSD
6	▶	Increases the value	Scrolls right in the OSD
7	LED Indicator	Power on (green), standby (amber), sleep mode (flashing amber)	
8	Green Power Button	Display power (On/Off)	

The back panel contains various connector openings.

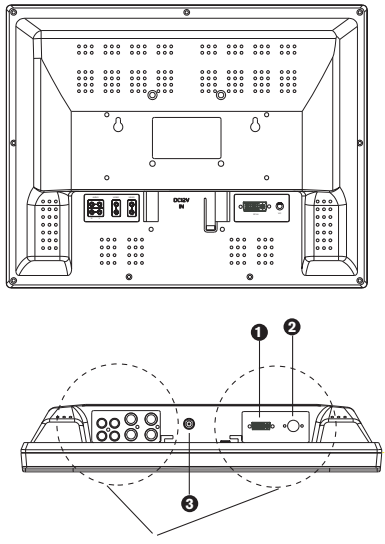


Figure 2: Back Panel (see Figure 3 for exploded view)

#	Item
1	DVI-I connector
2	Y/C connector (S-video)
3	Power input connector from base or optional power supply

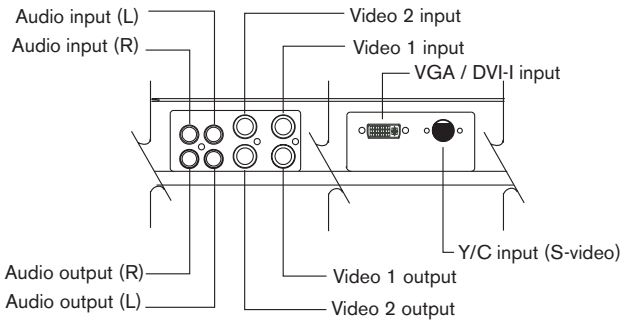


Figure 3: Connectors - Exploded View

The base unit contains the main connectors that supply power to the monitor.

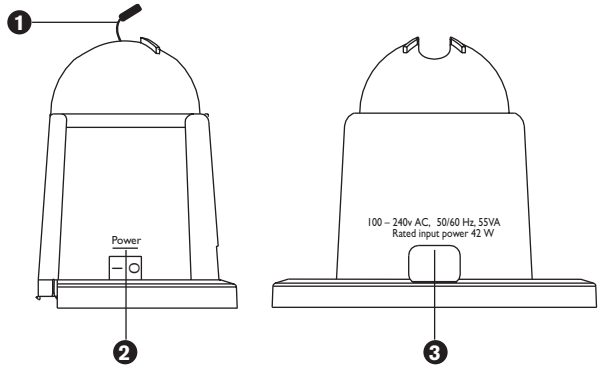


Figure 4: Base

#	Item
1	Power supply connector to display
2	Power supply ON/OFF
3	Power cord connection

4.0 GENERAL FEATURES

This high-performance, 15-inch Color Panel Display Monitor with 1024 x 768 pixels resolution has been designed to display Digital DVI, Analog VGA, and Composite Video signals.

4.1 Features

- 90 to 264 VAC Power Supply
- NTSC/PAL Auto-Detect
- (1024 x 768; 500 TVL) High Resolution
- VGA/DVI-I Input
- Composite Video Input
- Audio Input / Output
- Y/C Input (S-video)
- On-screen Display (OSD) with Multiple Languages
- De-Interlace Function
- Auto-Detect 3-D Comb Filter NTSC/PAL
- PIP, PAP, Channel Title

5.0 DESCRIPTION

5.1 Monitor

The MON152CL30 15-inch (38-cm) Color Panel Display Monitor displays PAL or NTSC standard color pictures in CCTV systems. The MON152CL30 monitor includes two (2) looping Composite Video BNC connector inputs, two (2) looping Audio RCA inputs, and one (1) Y/C (S-video) input using a 4-pin mini-DIN. In addition, this model works with both DVI-I and VGA signals.

To enhance the multi-input capability, "Picture-in-Picture" allows any of the composite video or S-video inputs to be inserted into each other, or into the VGA/DVI-I display.

Monitor control functions are accessed via the front panel push buttons and the multi-language On-screen Display (OSD). See Figure 1 for front panel descriptions.

6.0 INSTALLATION

6.1 Power

Model No.	Rated Voltage	Voltage Range	Power at Rated Voltage	Sync Format
MON152CL30	120/230 VAC 50/60 Hz	90-264 V	42 W	NTSC/PAL

6.2 Desktop Installation

The MON152CL30 monitor is delivered with a 3-pole, US-style power cord and a 3-pole, Euro-style power cord. Use the US-style power cord where 120 VAC, 60 Hz power is available; use the Euro-style power cord where 230 VAC, 50 Hz power is available.

The monitor automatically adjusts to either power input voltage. A Power (ON/OFF) switch is located on the base of the unit (Figure 4, Item 2).

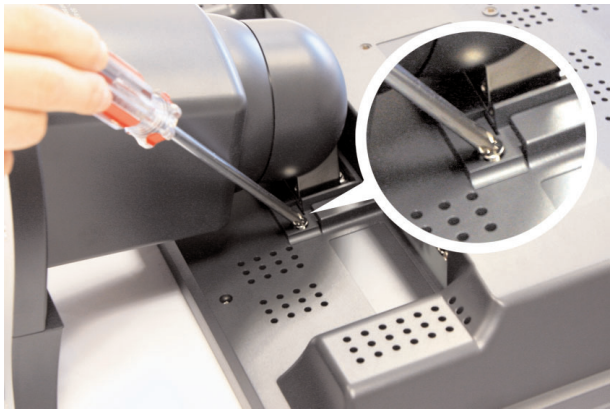
6.3 Wall Mount/Rack Mount Installation

The square mounting holes (75 mm (2.9 in.) centers) can be used for rack mount installation or with wall mount brackets (not provided) (refer to the Rack Mount Kit Instructions).

6.3.1 Wall Mount Installation

1. Remove the MON152CL30 power supply/base from the LCD panel section.
   a. Unscrew the two (2) holding screws before separating the base from the panel, as shown in Photo A.

Photo A



   b. Carefully remove the power bayonet connector (Figure 4, Item 1) from the panel (see Photo B), while sliding the base off the monitor.

Photo B

2. Mount the unit to the mounting bracket (not provided) using the four (4) mounting holes on the rear panel. The square mounting hole patterns are standard on 75 mm (2.9 in.) centers, as shown in Photo C.

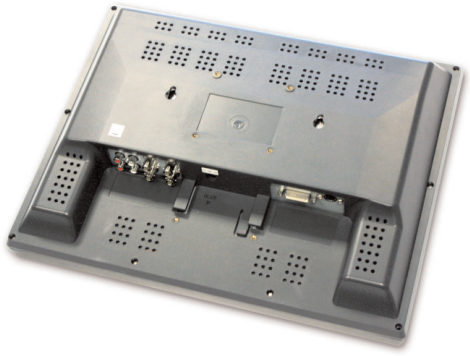


Photo C

6.3.2 Extension Cable Installation

Use the Extension Cable (included with the MON152CL30) to place the power supply/base unit to 1.5 m (5 ft) from the LCD panel for wall mount or rack mount installations.

1. Follow the instructions in Section 6.3.1, Step 1 to remove the power supply/base from the LCD panel section.
2. Attach the power supply extension cable.
   a. Connect one end of the extension cable (large connector) to the power supply/base, as shown in Photo D.

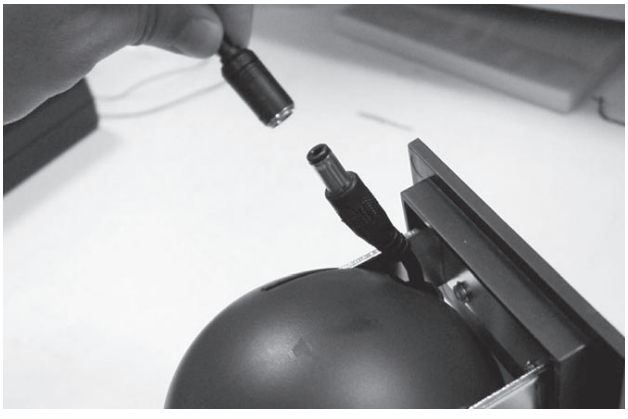


Photo D

b. Connect the other end of the extension cable (small connector) to the power input connector on the rear side of the LCD panel, as shown below in Photo E.

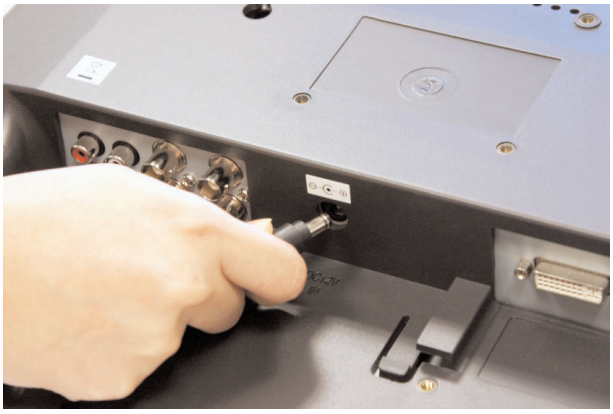


Photo E

3. Connect the appropriate ends of the IEC power cord to the power source (mains) and power supply/base unit. Toggle the power switch on the base to the ON position.

6.3.3 MON151PS Power Supply Installation

Use the MON151PS Power Supply (purchased separately) to power the MON152CL30 unit's LCD panel separately from the power supply/base unit. The power source (mains) (120/230 VAC) can be located at a distance of up to 3 m (10 ft) away. Use for a wall mount or rack mount installation.

1. Follow the instructions in Section 6.3.1, Step 1 to remove the power supply/base from the LCD panel section.

NOTE: The power supply/base unit may now be stored, as it is no longer required to power the unit.

2. Connect the bayonet connector from the power supply to the power input connector on the rear side of the LCD panel, as shown below in Photo F.

Photo F

3. Connect the IEC power cord to the MON151PS power supply unit.
4. Mount the LCD panel in its intended location.
5. Connect the power end of the IEC power cord to the power supply source.

6.4 Connecting the Composite Video Signal to the Monitor

There are two (2) BNC connectors located on the rear of the monitor for composite video input and two (2) BNC connectors for composite video outputs (Figure 6).

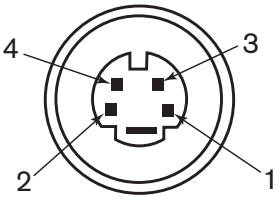
NOTE: All video inputs are active loop-through. The impedance is automatically set to 75 ohm by the input of the signal on the input connector, while operating in a single connection mode (Figure 8). If a cable is also connected to the output connector, the video signal can be passed on to another monitor connected to it via the active loop-through function. Up to three (3) monitors may be connected in this manner (Figure 9).

NOTE: To select between VIDEO1 and VIDEO2, press **Input** (Figure 1, Item 1) located on the front of the monitor.

6.5 Connecting the Y/C (S-video) Signal to the Monitor

There is one (1) mini-DIN type connector for the S-video (Y/C) input (as shown in Figure 5 and Figure 6).

NOTE: Both Y and C inputs are terminated with 75 ohm.



1. GND
2. GND
3. Y-signal IN or OUT
4. C-signal IN or OUT

Figure 5: Y/C Connection Pin-out

6.6 Connecting Audio to the Monitor

There are two (2) sets of audio connectors (Figure 6); one set is audio input (R) and input (L); the second set is audio output (R) and audio output (L).

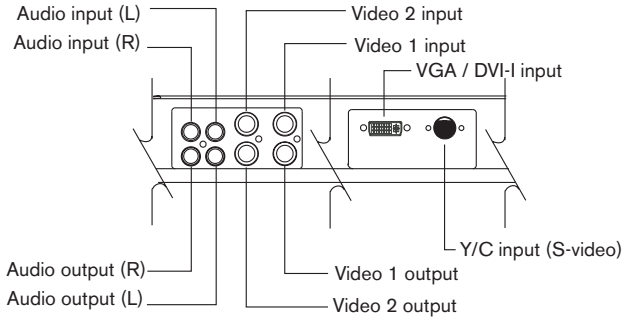


Figure 6: Connectors - Exploded View

6.7 Connecting the VGA / DVI-I Signal to the Monitor

6.7.1 VGA Signal

Connect the analog VGA signal using the provided VGA cable (DVI-I to D-SUB).

6.7.2 DVI-I Signal

Connect the digital DVI-I signal using a standard DVI-I cable (not provided).

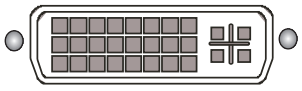


Figure 7: VGA / DVI-I Input

6.8 Ventilation

To prevent overheating, ensure that the ventilation openings on the rear of the monitor are not covered.

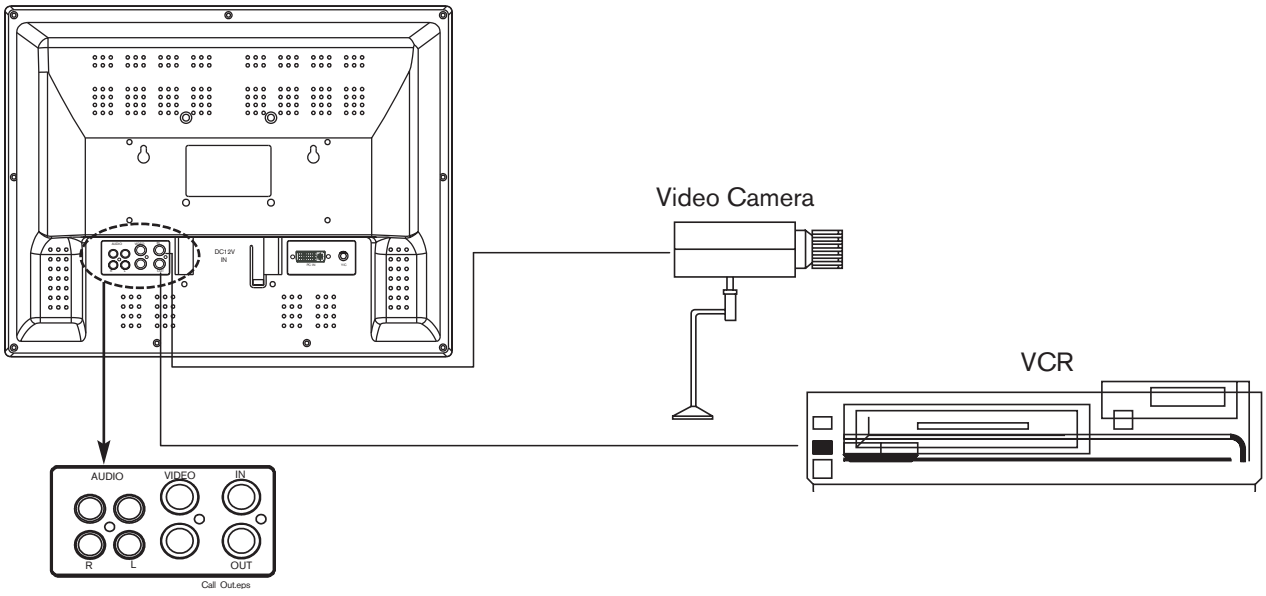


Figure 8: Single Monitor Configuration

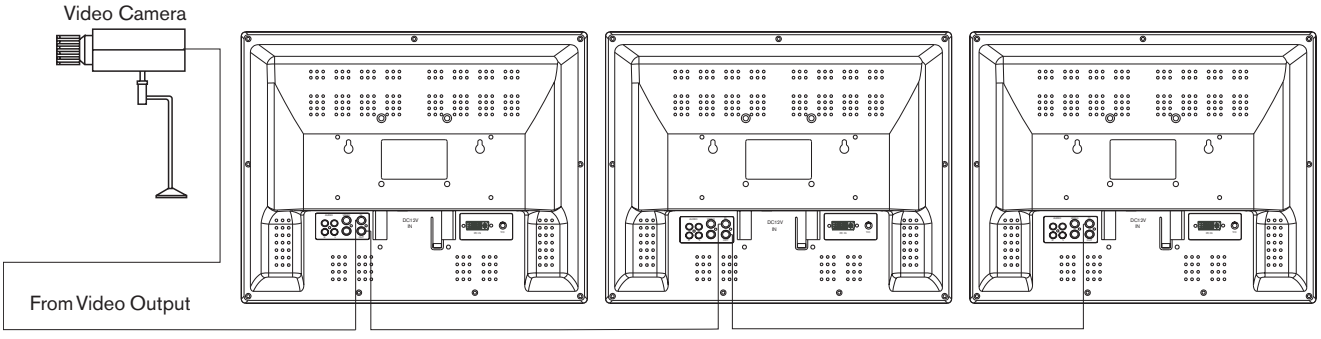


Figure 9: Multiple Monitor Configuration

7.0 OPERATION

7.1 Front Panel Controls

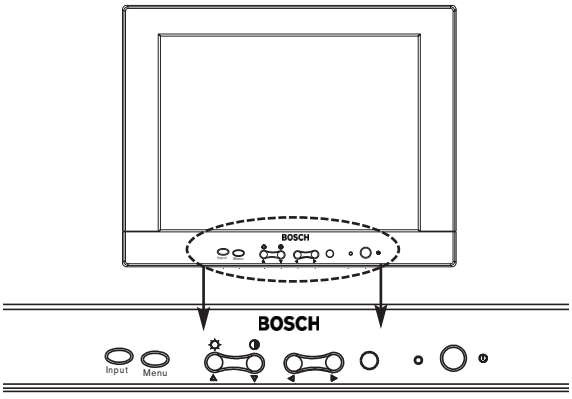


Figure 10: Display Panel Exploded View

Input Press this button to select the signal to be displayed. Selects VIDEO1, VIDEO2, S-video, PC, and DVI.

Menu Press this button to select the on-screen display (OSD) or to save your settings.

▲ Press this button to scroll up in the OSD.

▼ Press this button to scroll down in the OSD.

◄ Press this button to decrease the value or to scroll left in the OSD.

► Press this button to increase the value or to scroll right in the OSD.

Brightness

1. Press the ▲ button to select the brightness.
2. Press the ◄ or ► button to increase or decrease the value.
3. Press **Menu** to save changes.

Contrast

1. Press the ▼ button to select the contrast.
2. Press the ◄ or ► button to increase or decrease the value.
3. Press **Menu** to save changes.

LED Indicator

Indicates power is on (green), standby (amber), sleep mode (flashing amber).

⏻ **Green Power Button**

Press this button to power (ON/OFF).

7.2 Front Panel Lock-out Feature

To lock the front panel, press and hold the ▲▼◄► buttons simultaneously until a message flashes "KEY LOCKED", then release. To unlock the front panel, press and hold the ▲▼◄► buttons simultaneously until a message flashes "KEY UNLOCKED", then release.

7.3 On-screen Display (OSD) Menu (Multilanguage)

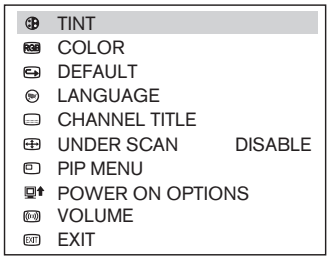
7.3.1 Navigating the Menu

1. Press the **Input** button to select an active input. NOTE: If an active input is not selected, the OSD main menu can not be accessed.
2. Press **Menu** to select the OSD Main menu.
3. Press the ▲ or ▼ button to select a menu option, then press **Menu** to select the sub menu.
4. Press the ◄ or ► button to increase or decrease the value.
5. Press the **Menu** button to save your changes.
6. To exit, press the ▲ or ▼ button to select **Exit,** then press **Menu.**

NOTE: OSD will automatically disappears after 15 seconds of in-activity.

7.3.2 Video Mode

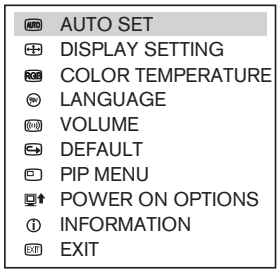
Press the **Menu** button for the following menu options:



Main Menu	Function
Tint	Adjusts tint level; for best results, adjust until skin color is natural. NOTE: Applicable to NTSC only; not available in PAL format.
Color	Adjusts the overall color intensity of the screen.
Default	Resets to the factory default settings for brightness, contrast, tint, color, and volume.
Language	Selects the language for the OSD text, available in English, French, German, Italian, Spanish, Dutch, and Portuguese.
Channel Title	Enables / Disables and allows editing of the 16-character title per video input channel.
Under Scan	Enables / Disables the Under Scan function.
PIP Menu	Selects the picture-in-picture sub menu.
Power/On Option	Selects the video input to be displayed upon power-up after a power interruption. The factory default setting is VIDEO1.
Volume	Adjusts the volume for the audio.
Exit	Exits the OSD Menu and returns to standard monitor display.

7.3.3 VGA / DVI Mode

Press the **Menu** button for the following menu options:



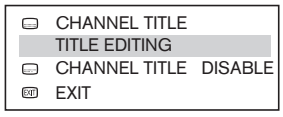
Main Menu	Function
Auto Set	Automatic adjustment of H position, V position, phase and clock values.
Display Setting	Manual adjustment of the H position, V position, and fine tune.
Color Temperature	Selects the color temperature of the LCD monitor.
Language	Selects the language for the OSD text, available in English, French, German, Italian, Spanish, Dutch, and Portuguese.
Volume	Adjusts the volume for the audio.
Default	Resets to the factory default settings for brightness, contrast, tint, color, and volume.
PIP Menu	Selects the picture-in-picture sub menu.
Power on Option	Selects the video input to be displayed upon power-up after a power interruption. The factory default setting is VIDEO1.
Information	Displays H frequency, V frequency, and resolution information.
Exit	Exits the OSD menu and returns to standard monitor display. NOTE: The OSD main menu is removed from the display after 15 seconds if no selections or adjustments are made.

8.0 SPECIAL FEATURES

8.1 Channel Title

The **Channel Title** menu displays the name of the active input at the bottom of the screen.

NOTE: This feature does not allow **PIP** or **PAP** to be displayed when the **Channel Title** is ON.



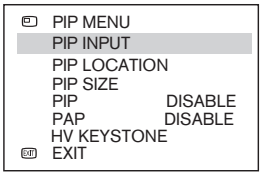
Main Menu	Function
Title Editing	Edits the 16-character title for VIDEO1, VIDEO2, and S-video
Channel Title	Enables/disables channel title

8.2 Underscan

When **Underscan** is enabled, it reduces the image by approximately 5%.

8.3 Picture-in-Picture (PIP) and Picture-and-Picture (PAP)

To enhance the multi-input capability, "Picture-in-Picture" allows any of the composite video or S-video inputs to be inserted into each other, or into the VGA/DVI display.



Main Menu	Function
PIP Input	Selects composite or S-video signal for use in the PIP or the PAP window NOTES: • VGA/DVI-I can not be selected for PIP/PAP window display • The PIP window will be displayed on all channels
PIP Location	Positions PIP window in any corner of the display or in a custom location
PIP Size	Sets PIP window size to one of the following: • Small (3.6 in. diagonal) • Medium (4.9 in. diagonal) • Large (7.4 in. diagonal)
PIP	Enables/disables PIP window
PAP	Enables/disables PAP window
HV Keystone	Tilts entire picture in horizontal and/or vertical direction; used to adjust the picture in monitor wall applications

- The PAP feature splits the screen vertically; displaying the PAP image on the left side and the composite/S-video signal on the right side.
- The PAP function will not work with a VGA/DVI signal.
- The signal processing of the PIP/PAP compared to the main window causes a difference in sharpness and color.
- **PIP**, **PAP**, and **Channel Title** can not be combined. Only one can be enabled at a time.

9.0 SPECIFICATIONS

Electrical

Rated Voltage	120/230 VAC, 50/60 Hz
Voltage Range	90 to 264
Power at Rated Voltage	42 W
Sync Format	PAL/NTSC
LCD Panel	TFT LCD
Screen Size (H x V)	304.1 x 228.1 mm (12 x 9 in.)
Viewable Picture Area	38 cm (15 in.) measured diagonally
Pixel Pitch (H x V)	0.297 x 0.297 mm (0.01 x 0.01 in.)
Resolution	1024 x 768 pixels; 500 TVL typical
Aspect Ratio	4:3
Display Colors	8 bits interface; 16.2 million colors
Response Time	16 ms
Backlight	Four (4) cold cathode fluorescent tubes, rated life 50,000 hours, at 50% brightness

Optical Characteristics

Luminance	400 cd/m^2
Contrast Ratio (CR)	500:1
Viewing Angle	140° horizontal, 125° vertical @ CR ≥ 10

Video Input

Composite Video (CVBS)	1.0 Vp-p (0.5-1.5 Vp-p), automatic switching from 75 Ohm unbalanced termination to Hi-Z with loop-through operation
Y/C (S-video)	0.7 Vp-p (Y-signal), 0.3 Vp-p (C-signal), 75 Ohm termination
Picture-in-Picture	Video 1, Video 2, S-Video

VGA Input

Analog RGB	0.7 Vp-p (0.5-1 Vrms)
Picture-in-Picture	Video 1, Video 2, S-Video
VGA Timing Modes	640 x 480, 60/72/75 Hz 800 x 600, 56/60/72/75 Hz 1024 x 768, 60/70/75/85 Hz
Audio Input	1.0 V line level
Audio Output	Loop-through line level Speakers: two (2), 1 W

Controls

Front Panel	Push-buttons
Input	Selects Video 1, Video 2, S-Video, VGA, or DVI input
Menu	Selects On-screen Display (OSD) ▲ Up cursor, brightness select ▼ Down cursor, contrast select ◀ Adjustment decrease ▶ Adjustment increase
Power	On / Off
Front Panel Lockout	Multiple push-button combination

On-screen Display

Video	Tint (NTSC only), Color, Default, Language, Channel Title, Underscan, PIP Menu, Power-on Options, Volume, Exit
VGA/DVI	Auto Set, Display Setting, Color Temperature, Language, Volume, Default, PIP Menu, Power-on Options, Information, Exit

Indicators

LED	Power On (green), Standby (amber), Sleep Mode (flashing amber)
On-Screen	"No Signal" (flashing)

Connectors

Video 1	Composite video: two (2) BNC (1 in, 1 out) audio: two (2) RCA (1 in, 1 out)
Video 2	Composite video: two (2) BNC (1 in, 1 out) audio: two (2) RCA (1 in, 1 out)
Y/C (S-video)	One (1) mini-DIN, 4-pin (in only)
DVI	One (1) VGA to DVI-I cable included
Power Cord	Two (2), 3-wire with grounded plug, 1.8 m (6 ft) long. One (1) with a European/Continental plug type and one (1) with a U.S. plug type

Mechanical

Cabinet	Material: ABS94V0 plastic Finish: Charcoal Wall mounting compatible with standard bracket, 75 mm centers, M4 thread

Dimensions

LCD Panel with Base (W x D x H)	391 x 183 x 395 mm (15.4 x 7.2 x 15.6 in.)
LCD Panel Only (W x D x H)	391 x 70 x 306 mm (15.4 x 2.75 x 12 in.)
Weight	LCD panel with base: 4.9 kg (10.8 lb) LCD panel only: 3.6 kg (8.0 lb)

Environmental

Operating Temp.	0°C to 45°C (32°F to 122°F)
Storage Temp.	-20°C to 60°C (-4°F to 140°F)
Humidity	10%-95%, non-condensing

Product Regulatory Compliance

Electromagnetic Compatibility (EMC)

	Complies with FCC Part 15, ICES-003, and CE regulations
Product Safety	Complies with CE regulations, CUL US, EN, and IEC Standards

Accessories

MON151PS

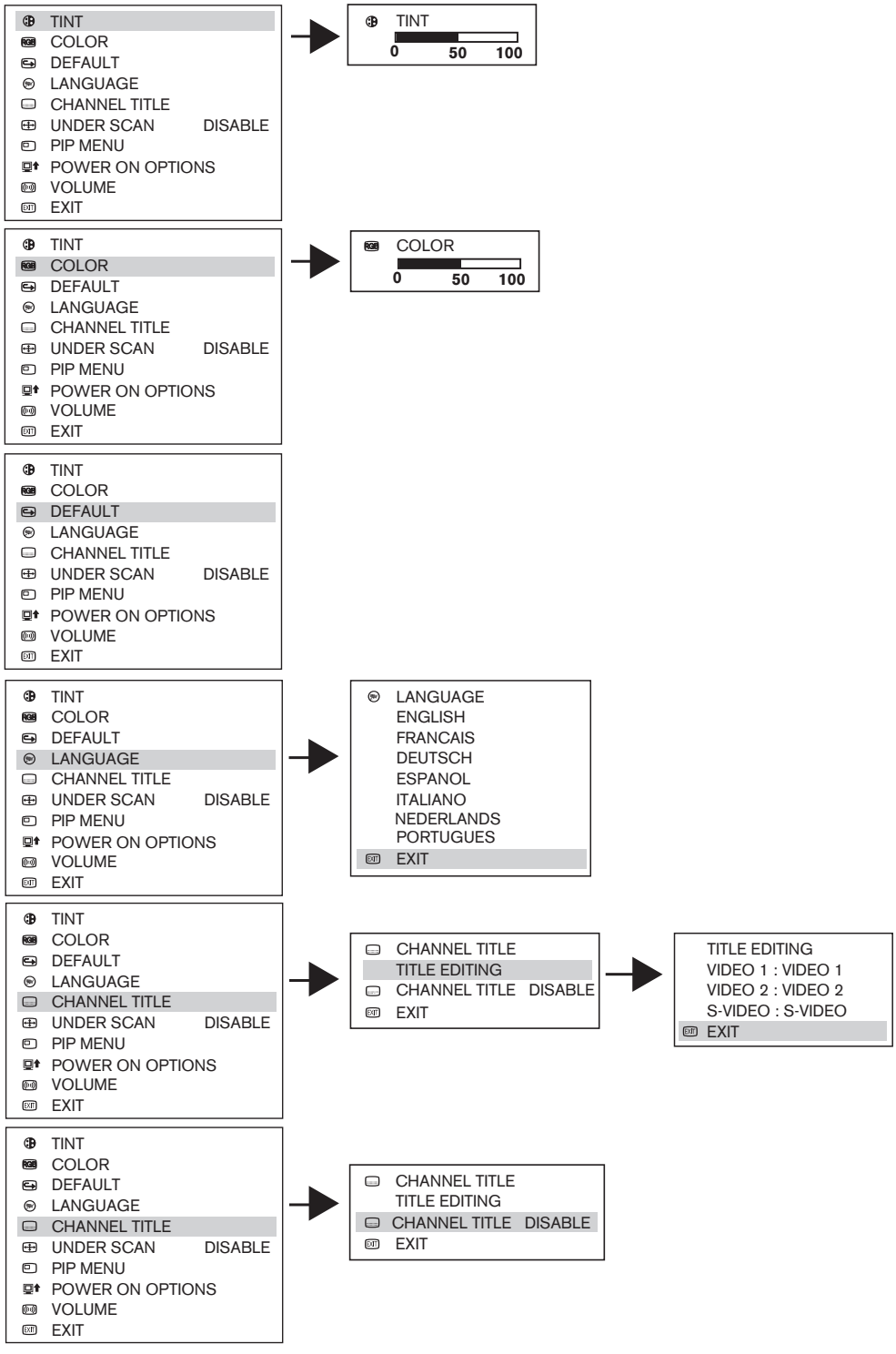
Power Supply	120/220 VAC, 50/60 Hz input, 12 VDC, 4.0 A output. Used for operation away from the base.

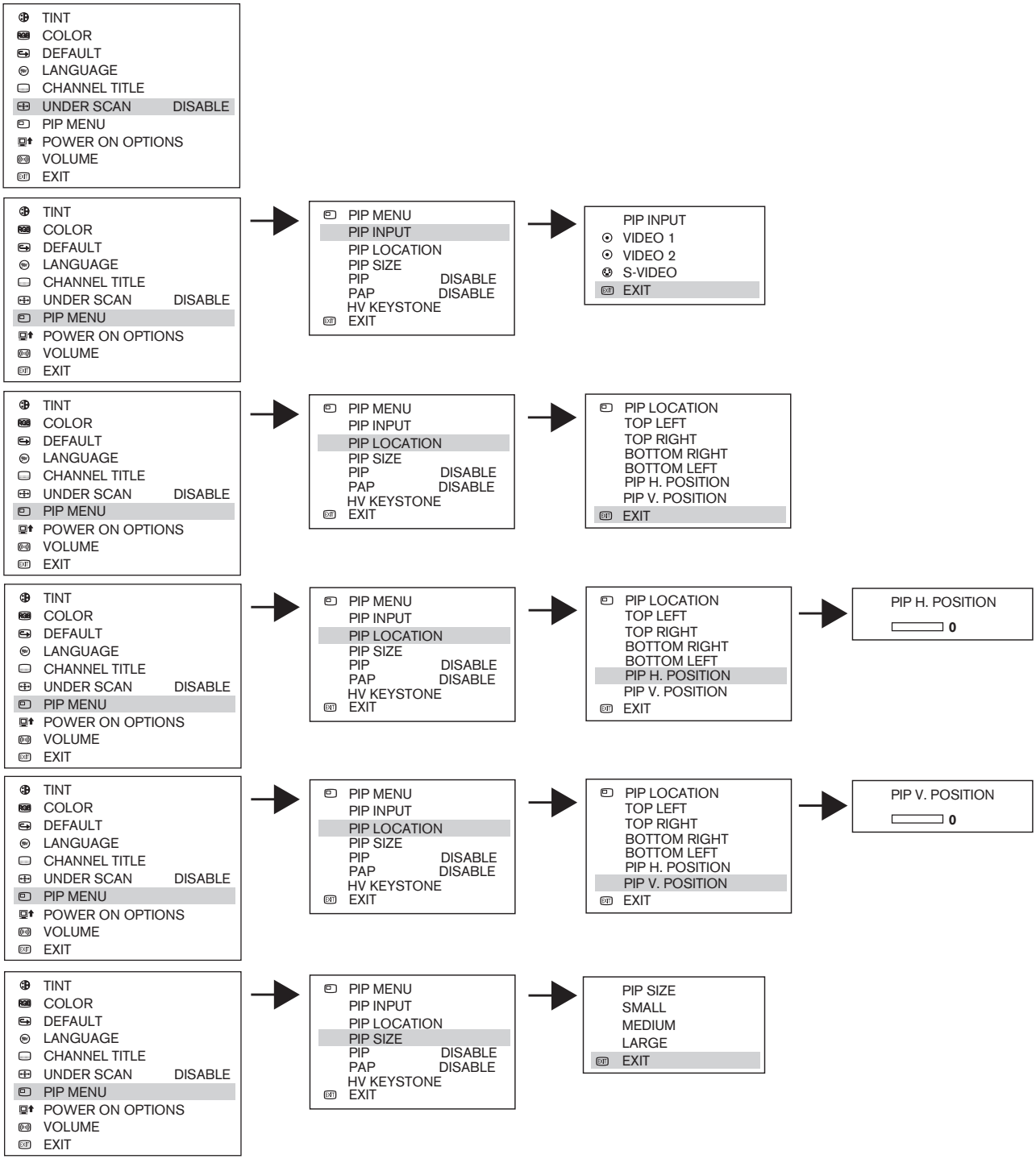
MON151RK Rack Mount Kit

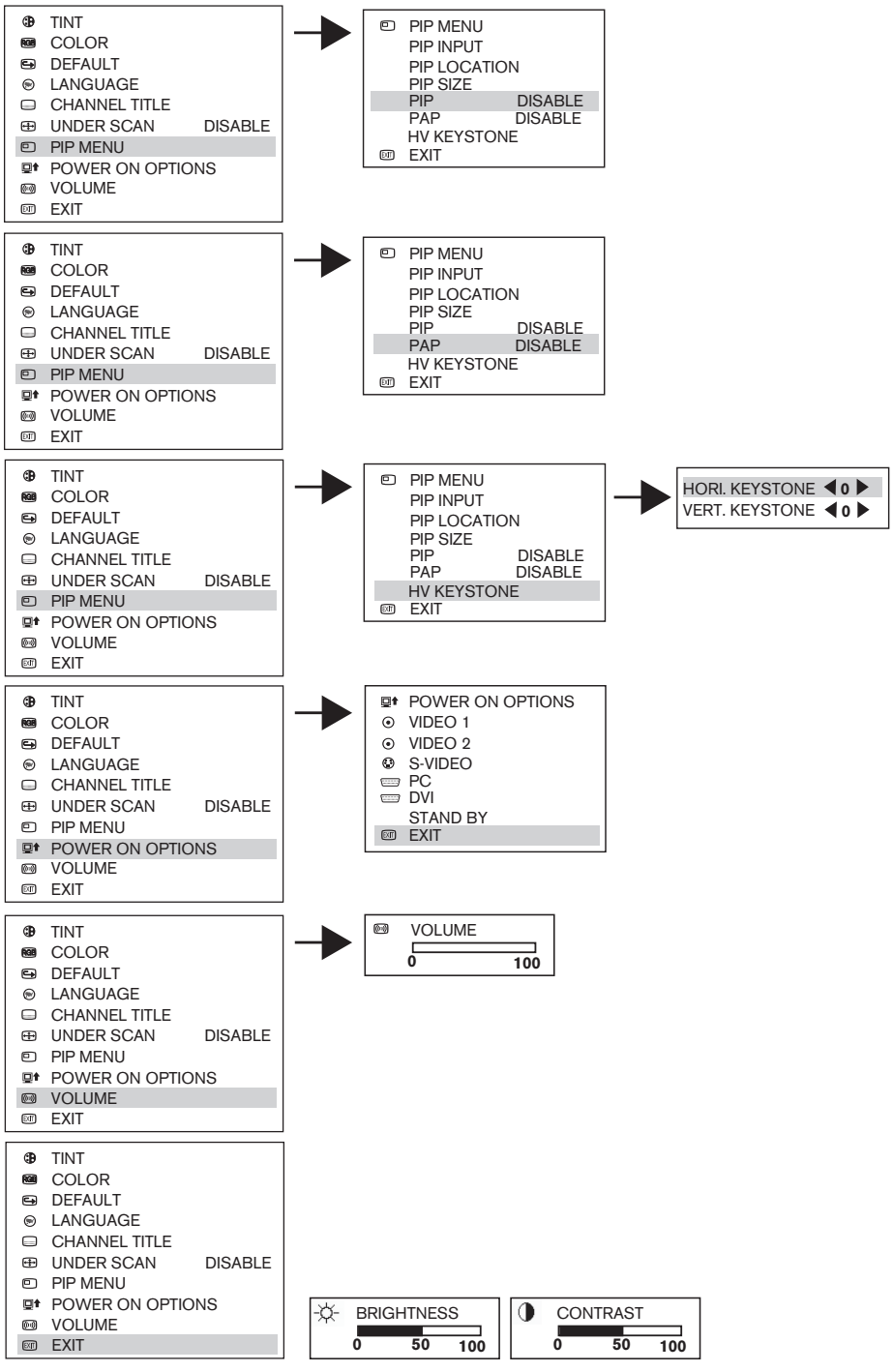
For mounting one MON152CL monitor in an EIA standard 48.26 cm (19 in.) rack 1unit wide by 7 rack units high

10.0 APPENDIX: On-screen Display Menu Configurations

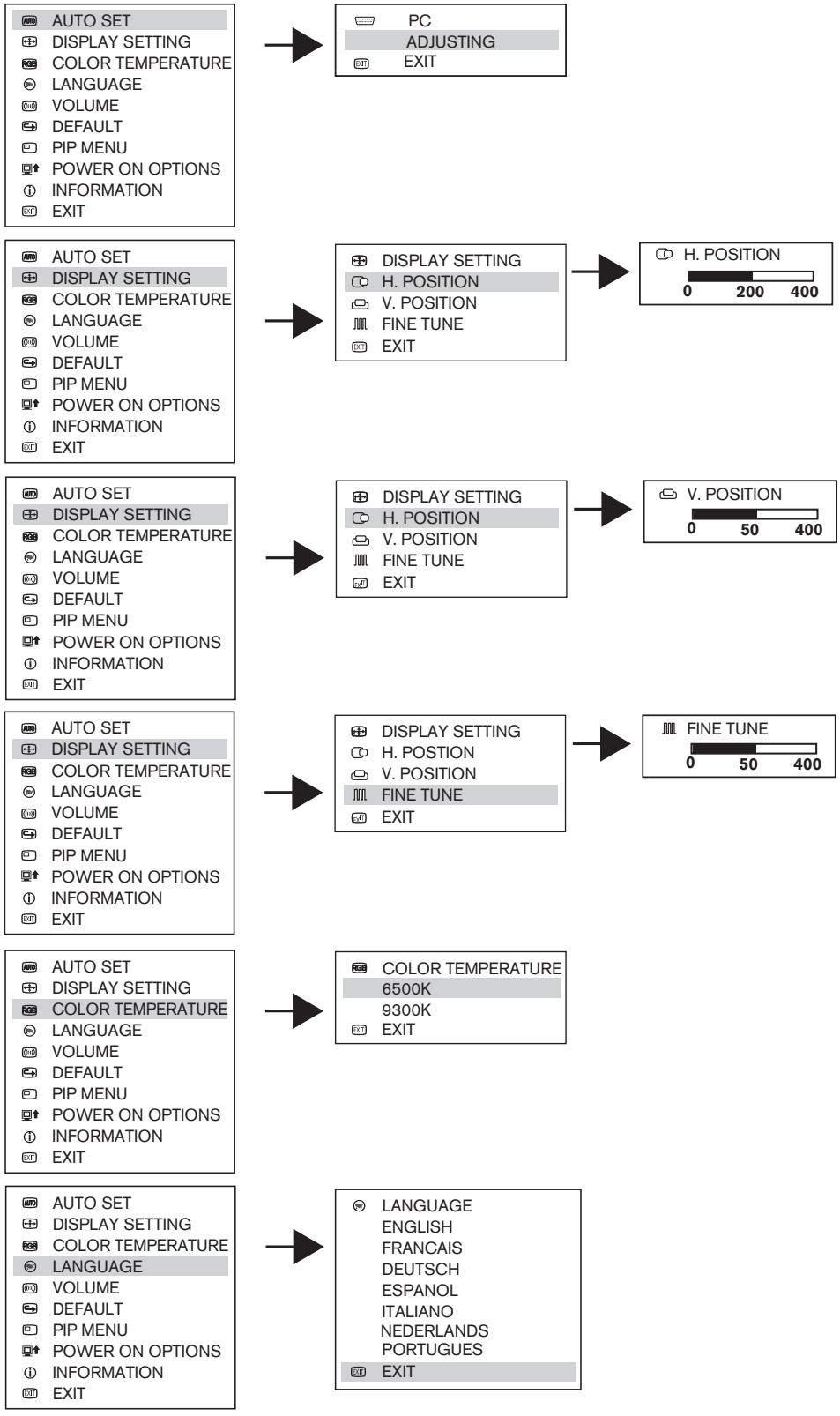
10.1 Video Mode (NTSC Only)

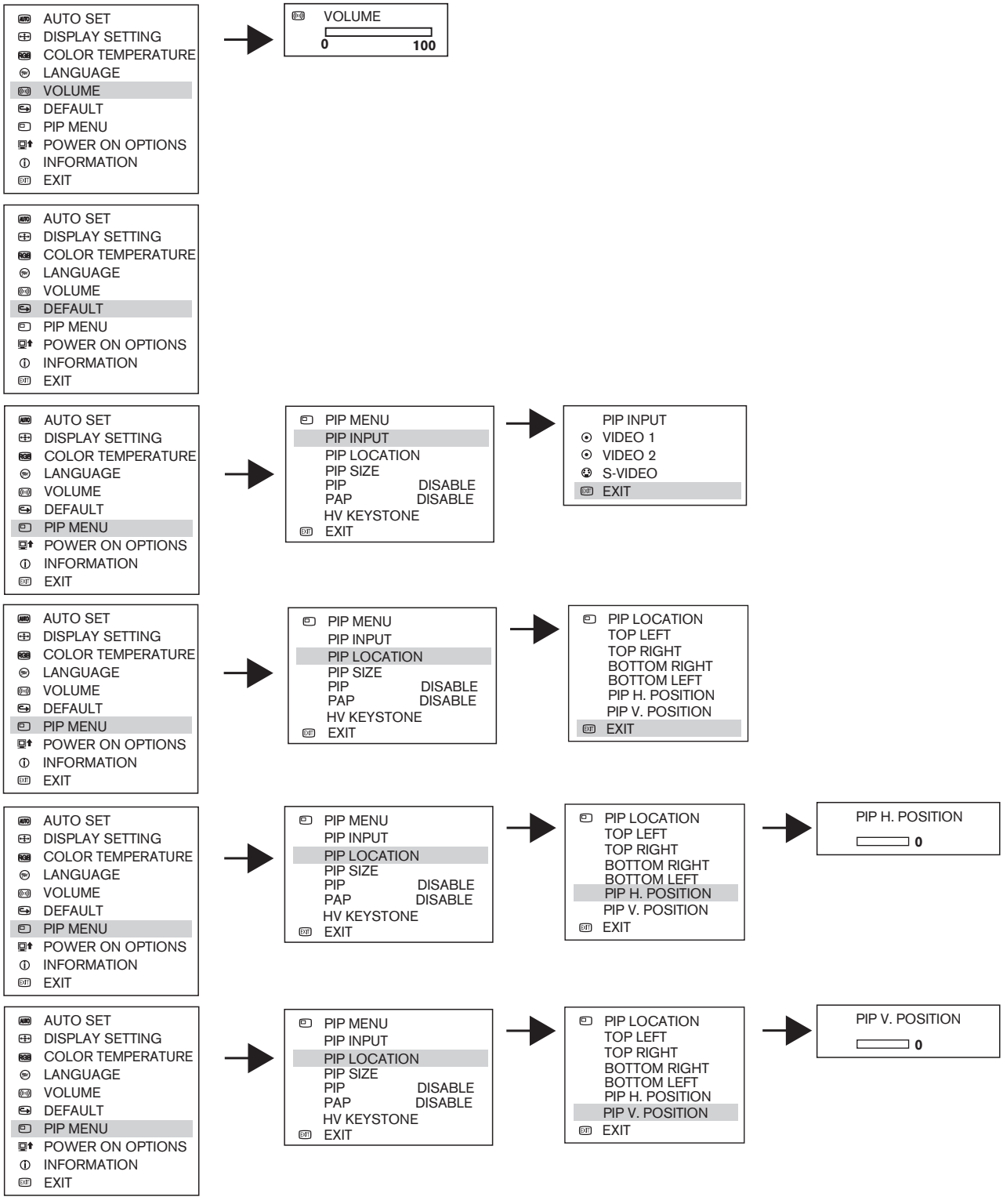


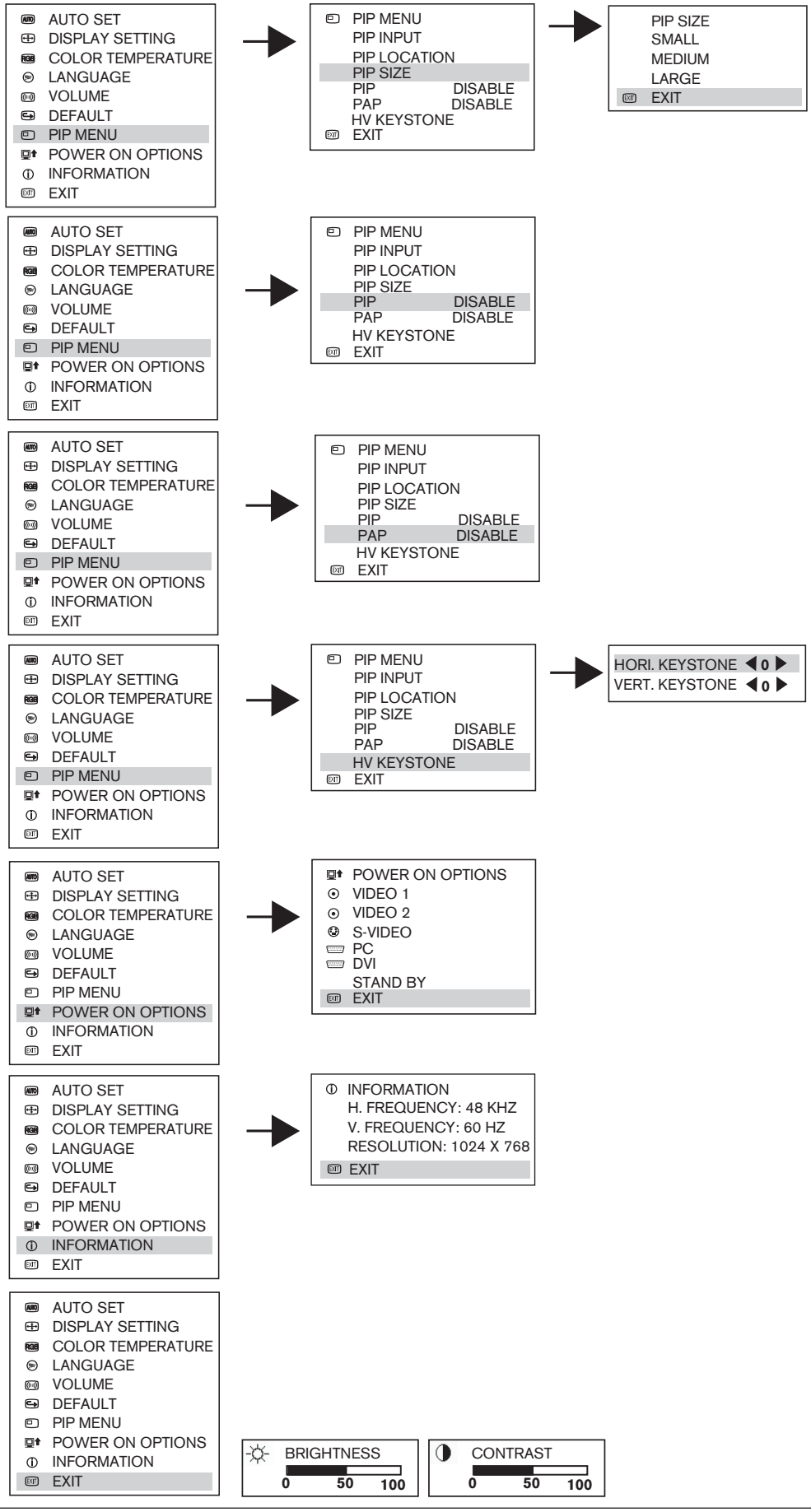

TINT
COLOR
DEFAULT
LANGUAGE
CHANNEL TITLE
UNDER SCAN DISABLE
PIP MENU
POWER ON OPTIONS
VOLUME
EXIT
PIP MENU
PIP INPUT
PIP LOCATION
PIP SIZE
PIP DISABLE
PAP DISABLE
HV KEYSTONE
EXIT
PIP INPUT
VIDEO 1
VIDEO 2
S-VIDEO
EXIT
PIP LOCATION
TOP LEFT
TOP RIGHT
BOTTOM RIGHT
BOTTOM LEFT
PIP H. POSITION
PIP V. POSITION
PIP H. POSITION
0
PIP V. POSITION
PIP SIZE
SMALL
MEDIUM
LARGE


TINT
COLOR
DEFAULT
LANGUAGE
CHANNEL TITLE
UNDER SCAN DISABLE
PIP MENU
POWER ON OPTIONS
VOLUME
EXIT
PIP MENU
PIP INPUT
PIP LOCATION
PIP SIZE
PIP DISABLE
PAP DISABLE
HV KEYSTONE
EXIT
HORI. KEYSTONE 0
VERT. KEYSTONE 0
POWER ON OPTIONS
VIDEO 1
VIDEO 2
S-VIDEO
PC
DVI
STAND BY
VOLUME
0 100
BRIGHTNESS
0 50 100
CONTRAST
0 50 100

10.2 VGA / DVI Mode




AUTO SET
DISPLAY SETTING
COLOR TEMPERATURE
LANGUAGE
VOLUME
DEFAULT
PIP MENU
POWER ON OPTIONS
INFORMATION
EXIT
VOLUME
0
100
PIP INPUT
PIP LOCATION
PIP SIZE
PIP DISABLE
PAP DISABLE
HV KEYSTONE
VIDEO 1
VIDEO 2
S-VIDEO
TOP LEFT
TOP RIGHT
BOTTOM RIGHT
BOTTOM LEFT
PIP H. POSITION
PIP V. POSITION
0


AUTO SET
DISPLAY SETTING
COLOR TEMPERATURE
LANGUAGE
VOLUME
DEFAULT
PIP MENU
POWER ON OPTIONS
INFORMATION
EXIT
PIP MENU
PIP INPUT
PIP LOCATION
PIP SIZE
PIP DISABLE
PAP DISABLE
HV KEYSTONE
EXIT
PIP SIZE
SMALL
MEDIUM
LARGE
EXIT
PIP DISABLE
PAP DISABLE
PAP DISABLE
HORI. KEYSTONE 0
VERT. KEYSTONE 0
POWER ON OPTIONS
VIDEO 1
VIDEO 2
S-VIDEO
PC
DVI
STAND BY
EXIT
INFORMATION
H. FREQUENCY: 48 KHZ
V. FREQUENCY: 60 HZ
RESOLUTION: 1024 X 768
EXIT
BRIGHTNESS
0 50 100
CONTRAST
0 50 100

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